SciVerse ScienceDirect

Procedia - Social and Behavioral Sciences 30 (2011) 530 – 533

Procedia
Social and Behavioral Sciences

Metacognitive beliefs and negative emotions

Komeil Zahedi Tajrishi[a]*, Shahram Mohammadkhani[b], Fatemeh Jadidi [c]

[a]*Department of Psychology, University of Tehran, P. O. Box 14155-6456, Tehran, Iran*
[b]*Department of Psychology,University of Tarbiat Moallem, Tehran, Iran*
[c]*Department of Psychology,University of Allameh Tabataba'i, Tehran, Iran*

Abstract

The present study explored the relationships between metacognitive beliefs and negative emotions in university students. Three hundred students (174 males, 126 females) were selected from universities in the city of Tehran through multistage cluster-random sampling. All participants were asked to complete the following questionnaires: Metacognitions Questionnaire 30 (MCQ-30; Wells & Cartwright-Hatton, 2004) and Hospital Anxiety And Depression Scale (HADS; Zigmond & Snaith, 1983). Four dimensions and total scores of metacognition (positive beliefs about worry, negative beliefs about worry concerning uncontrollability and danger, cognitive confidence and need to control thought) were found to be positively and significantly correlated with negative emotions (anxiety and depression). In other words, individuals with higher scores in metacognition scale revealed more negative emotions in comparison with individuals with lower scores. The findings provide preliminary support for the role of metacognitions beliefs in the maintenance of negative emotions.

Keywords: Metacognition; Negative emotion; Metacognitive beliefs; Anxiety; Depression

1. Introduction

Metacognition refers to the ‘‘stable knowledge or beliefs about one's own cognitive system, and knowledge about factors that affect the functioning of the system; the regulation and awareness of the current state of cognition, and appraisal of the significance of thought and memories" (Wells, 1995, p. 302). This has been defined as beliefs and attitudes held about cognition—for example, "cognition about cognition" (Flavell & Ross, 1981) and "thinking about thinking" (Yussen, 1985). In other words Metacognition refers to an array of strategies, knowledge, and processes that appraise, monitor, and control cognition (Spada, Nikčević, Moneta, & Wells, 2007; Wells, 2000). Despite the fuzziness in the conceptualization of the term "metacognition" (Flavell, 1987), consensus defines metacognition as the "knowledge and control individuals have over their own cognition and learning experiences" (Allen & Armour-Thomas, 1991, p. 203; Flavell & Ross, 1981).

Metacognition is a multifaceted concept. The great majority of theorists would agree with distinction between two major facets of metacognition (Wells, 2000; Yussen, 1985): metacognitive *regulation* and metacognitive *knowledge* (or metacognitive beliefs). Metacognitive regulation refers to processes that coordinate cognition. These include both bottom-up processes called cognitive *monitoring* (e.g., source monitoring in memory retrieval) and top-down processes called cognitive *control* (e.g., conflict resolution) (Reder & Schunn, 1996). Metacognitive knowledge is declarative knowledge about cognition, which we derive from long-term memory (Flavell, 1979). It

* Komeil Zahedi Tajrishi. Tel.: +98-9125027053.
E-mail address: komeil.zahedi@gmail.com.

doi:10.1016/j.sbspro.2011.10.103

comprises implicit or explicit knowledge or ideas, beliefs, and 'theories' about the person him/herself and the others as cognitive beings, and their relations with various cognitive tasks, goals, actions, or strategies (Flavell, 1979).

The Self-Regulatory Executive Function (S-REF: Wells & Matthews, 1996) theory was the first to conceptualise multiple metacognitive factors as control components of information processing that affect the etiology and maintenance of psychological disturbance. According to S-REF theory metacognitive knowledge (metacognitions) predisposes individuals to develop response patterns to thoughts and internal events that are characterised by heightened self-focused attention, recyclical thinking patterns, avoidance and thought suppression, and threat monitoring.

The S-REF theory has led to the development of models of disorders such as: depression (Papageorgiou & Wells, 2003), generalised anxiety disorder (Wells & Matthews, 1994; Wells, 2000), and social phobia (Clark & Wells, 1995). Metacognitive beliefs have been found to be positively associated with alcohol use (Spada, Caselli & Wells, 2009), smoking dependence (Spada, Nikčević, Moneta, & Wells, 2007), depression (McEvoy, Mahoney, Perini & Kingsep, 2009), obsessive– compulsive symptoms (Metehan, Tosun, 2008), anxiety (Yılmaz, Gençöz & Wells, in press), and test-anxiety (Spada, Nikčević, Moneta, & Ireson, 2006).

However, most of the studies focus either on metacognition or on affect, independently from each other. The emphasis of this study is different. It is on metacognitive beliefs and its relationship with negative emotion (depression and anxiety).

2. Method

2.1. Participants and Procedure

Cluster-random sampling was used for selecting participants, who consisted of students study in universities in the city of Tehran. Three hundred students (174 males, 126 females) agreed to take part in the study. The mean age for the total sample was 21.5 years (SD=1.9 years) and the age range was 18–26 years, the mean age of female students was 20.5 within a range of 18 to 26 (SD= 1.8) and the mean age of male students was 22.2 within a range of 18 to 25 (SD= 1.8). All participants were asked to complete the Metacognitions Questionnaire 30 (MCQ-30; Wells & Cartwright-Hatton, 2004) and Hospital Anxiety And Depression Scale (HADS; Zigmond & Snaith, 1983).

2.2. Measures

Metacognitions Questionnaire 30 (MCQ-30; Wells & Cartwright-Hatton, 2004)- The MCQ-30 is a self-report measure assesses individual differences in metacognitive beliefs, judgments and monitoring tendencies. It consists of five replicable sub-scales assessed by 30-items in total. The five sub-scales measure the following dimensions of metacognition: (1) positive beliefs about worry; (2) negative beliefs about worry concerning uncontrollability and danger; (3) cognitive confidence; (4) beliefs about the need to control thoughts; and (5) cognitive self consciousness. Each item is related on a four-point Likert scale ranging from 1 (disagree) to 4 (strongly agree). Higher scores indicate higher levels of unhelpful metacognitions. The MCQ-30 possesses good psychometric properties (Spada, Mohiyeddini & wells, 2008).

Hospital Anxiety And Depression Scale (HADS; Zigmond & Snaith, 1983)- The HADS measures individual differences in negative emotions on two scales comprising 7 items each: anxiety (e.g., "I get a sort of frightened feeling as if something horrible is about to happen") and depression (e.g., "I feel as if I am slowed down"). Items are rated on a 4-point scale ranging from 0 ("not at all") to 3 ("most of the time"), with higher scores indicating higher levels of negative emotions. Respondents are asked to rate their emotional state over the course of the previous week. The scales scores are computed by averaging the scores of their constituent items. The HADS was originally designed for hospital inpatients, but has then been used extensively to measure overall levels of anxiety and depression in non-clinical populations, and found to have good validity and reliability (Caci, Bayle, Mattei, Dossios, Philippe, & Boyer, 2003).

3. Result

The statistical features of the subjects according to the scores of metacognition and negative emotion subscales and total scales are presented in Table 1. Internal consistency was examined using Cronbach's alpha computed for the total scores and the seven subscales. Alpha scores are presented ranged from 0.61 to 0.88 demonstrating good internal consistency (Table 1).

Table 1. Mean, standard deviation and Cronbach's α values of study variables (n = 300)

	Males		***Females***		***Total***		
scales	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*α*
Anxiety	7.21	3.75	6.83	4.01	7	3.80	0.83
Depression	8.74	3.08	7.78	3.91	8.30	3.50	0.65
Negative emotion	15.95	5.85	14.61	6.97	15.40	6.40	0.82
Positive beliefs about worry	11.80	4.29	11.80	4.09	11.80	4.30	0.83
Uncontrollability and danger	13.30	4.04	13.30	4.44	13.30	4.20	0.78
Cognitive confidence	11.50	3.98	11.50	4.25	11.50	4.00	0.78
Beliefs about the need to control thoughts	15.70	3.49	15.70	4.00	15.70	3.70	0.61
Cognitive self-consciousness	16.00	4.00	16.00	4.43	16.00	4.20	0.80
MCQ-30 Total Score	70.41	13.27	65.19	15.14	68	14.30	0.88

Pearson correlations were computed to explore the association between the MCQ-30 and negative emotion subscales (Table 2). These tests revealed that all negative emotion constructs were positively and significantly correlated with MCQ-30 total score. Additionally, the tests revealed that four factors of the MCQ-30 (positive beliefs about worry, negative beliefs about thoughts concerning uncontrollability and danger, cognitive confidence, and beliefs about the need to control thoughts) were positively and significantly correlated with anxiety and negative emotion total score. Moreover two factors of the MCQ-30 (negative beliefs about thoughts concerning uncontrollability and danger, and cognitive confidence) were positively and significantly correlated with depression.

Table 2. Correlations among the MCQ-30 subscales and total scale with negative emotion (n = 300)

scales	***Anxiety***	***Depression***	***Negative emotion***
Positive beliefs about worry	0.19**	0.02	0.13**
Uncontrollability and danger	0.52**	0.26**	0.46**
Cognitive confidence	0.24**	0.17**	0.24**
Beliefs about the need to control thoughts	0.26**	0.17	0.19**
Cognitive self-consciousness	0.10	0.07	0.02
MCQ-30 Total Score	0.38**	0.13**	0.30**

** p< 0.01 * p< 0.05

To evaluate the contributions of the five dimensions of metacognition to negative emotion, a stepwise multiple regression analysis was performed. Two significant models emerged (F=78.47; p<0.001; Adjusted R square=0.21) and (F=45.86; p<0.001; Adjusted R square=0.23). one variable alone were found to account for significant variance in negative emotion: negative beliefs about worry concerning uncontrollability and danger (Beta=0.46; p<0.001). These findings taken suggest that the one subscale of metacognition (negative beliefs about worry concerning uncontrollability and danger) can explains the variance of negative emotion significantly.

4. Discussion

This study examined the association between metacognitive beliefs and negative emotions among Iranian university students. The results of the correlation analyses indicated positive and significant correlations between four out of the five dimensions of metacognition and negative emotions. This results suggest that metacognition may be an important mediator of negative emotions (depression & anxiety). Therefore, the findings support the research hypothesis and add to prior studies. These findings are in line with the wide array of studies that have found evidence for an association between metacognition and psychological disturbance.

From a therapeutic perspective, these findings would indicate that the use of techniques specifically aimed at challenging metacognitions may improve negative emotion. Focusing on metacognitions in therapy has already been developed in models of anxiety and mood disorders by Wells and colleagues for the treatment of number of psychological disorders (Wells & King, 2006).

Major limitations of this study is the use self-report measurements and choose anxiety and depression among wide range of negative emotions. Therefore, future research should test the association between metacognitions and negative emotions by assessing a wider range of negative emotions.

References

Allen, B. A., & Armour-Thomas, E. (1991). Construct validation of metacognition. *Journal of Psychology, 127* (2), 203–211.

Caci, H., Bayle, F. J., Mattei, V., Dossios, C., Philippe, R., & Boyer, P. (2003). How does the Hospital Anxiety and Depression Scale measure anxiety and depression in healthy subjects? *Psychiatry Research, 118*, 89−99.

Flavell, J. H. (1979). Metacognition and cognitive monitoring—A new era of cognitive-developmental inquiry. *American Psychologist*, *34*, 906–911.

Flavell, J. H. (1987). Speculations about the nature and development of metacognition. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, motivation and understanding* (pp. 21–29). Hillsdale, NJ: Erlbaum.

Flavell, J. H., & Ross, L. (1981). *Social cognitive development: Frontiers and possible futures.* New York: Cambridge University Press.

McEvoy, P. M., Mahoney, A., Perini, S. J., & Kingsep, P. (2009). Changes in post-event processing and metacognitions during cognitive behavioral group therapy for social phobia. *Journal of Anxiety Disorders, 23,* 617-623.

Metehan, I., & Tosun, A. (2008). Exploring the role of metacognition in obsessive–compulsive and anxiety symptoms. *Journal of Anxiety Disorders, 22,* 1316-1325.

Reder, L. Y., & Schunn, C. D. (1996). Metacognition does not imply awareness: Strategy choice is governed by implicit learning and memory. In L. Y. Reder (Ed.), *Implicit memory and metacognition.* Mahah, NJ: Erlbaum.

Spada, M. M., Gabriele, C., & Wells, A. (2009). Metacognitions as a predictor of drinking status and level of alcohol use following CBT in problem drinkers: A prospective study. *Behaviour Research and Therapy 47*, 882–886.

Spada, M. M., Mohiyeddini, C., & Wells, A. (2008). Measuring metacognitions associated with emotional distress: factor structure and predictive validity of the Metacognitions Questionnaire 30. *Pers Individ Diff*, *45*, 238–242.

Spada, M. M., Nikčević, A. V., Moneta, G. B., & Ireson, J. (2006). Metacognition as a mediator of the effect of test anxiety on surface approach to studying. *Educational Psychology, 26*, 1−10.

Spada, M. M., Nikčević, A. N., Moneta, G. B., & Wells, A. (2007). Metacognition as a mediator of the relationship between emotion and smoking dependence. *Addictive Behaviors, 33*, 2120−2129.

Wells, A. (2000). Emotional disorders and metacognition: *Innovative cognitive therapy*. Chichester, UK: Wiley.

Wells, A. (1995). Meta-cognition and worry: A cognitive model of generalized anxiety disorder. *Behavioural and Cognitive Psychotherapy, 23*, 301–320.

Wells, A., & King, P. (2006). Metacognitive therapy for generalized anxiety disorder. Journal of Behavior Therapy and Experimental Psychiatry, 37, 206–212.

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: The S-REF model. *Behaviour Research and Therapy, 34*, 881−888.

Yilmaz, A. E., Gençöz, T., & Wells, A. (in press). The temporal precedence of metacognition in the development of anxiety and depression symptoms in the context of life-stress: A prospective study. *Journal of Anxiety Disorders.*

Yussen, S. R. (1985). The role of metacognition in contemporary theories of cognitive development. In D. L. Forrest-Presley, G. E. MacKinnon, & T. G. Waller (Eds.), *Metacognition, cognition, and human performance* (pp. 253–283). Orlando, FL: Academic.

Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. Acta Psychiatrica Scandinavica, 67, 361−370.